

PATENT SPECIFICATION

346,235

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COMPLETE SPECIFICATION.



Improvements in Eye-training Apparatus.

We, WALTER GREEN, a British subject, and ELLIOTT OPTICAL COMPANY LIMITED, a British Company, both of 104 to 105, Great Saffron Hill, London, E.C.1, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention concerns improvements in apparatus for eye-training purposes and has for its object to provide apparatus of a simple form for training the eye muscles of persons, and particularly children, suffering from defects of convergence, divergence, supravergence or cyclovergence of the eyes.

The essential feature of the apparatus is the provision of eyepieces and picture holders arranged upon the principle of the stereoscope but with the addition of means for precisely varying the lateral spacing of the eyepieces and pictures during training. In addition the apparatus embodies adjustments to correct for hyperphoria and the like as hereinafter explained.

One embodiment of the invention is shown by way of example in the accompanying drawing, wherein:—

Fig. 1 is a front elevation;

Fig. 2 is a part-sectional side elevation;

Figs. 3 to 5 are detail views.

The apparatus comprises a base 10 on which are mounted three pillars 11, 12 and 13. Pillar 11 supports an adjustable chin-rest 14, and pillar 12 carries a lamp holder 15 on which are supported an electric lamp 16 and reflector 17, while pillar 13 has pivoted to it at 18 an L-shaped bracket 19 supporting the remaining parts of the apparatus. A nut 20 engaging a threaded portion of the pivot 18 serves to lock said bracket in any desired position.

At its upper end the bracket 19 is formed with laterally extending angle-section arms 21 which in turn extend downwardly at their ends 22 (Figs. 1 and 4). Secured to said arm portions by screws 23 is a metal plate 24 whose upper and lower edges at each end are turned

over to form guides 25 for plates 26 carrying eye pieces 27. The plate 24 is suitably cut away as shown in Fig. 1 to allow movement of the eyepieces, which latter are moved by a screw 28 engaging threaded blocks 29 on the plates 26 and operable by milled knobs 30. A pointer 31 on one block co-operates with a scale 32 on the other to indicate their relative positions. Each plate 26 has pivoted to it a carrier 33 for a prism 34, a spring 35 being employed to hold the carrier in either of the positions shown in Fig. 4.

The bracket 19 also carries a small bracket 36 supporting a head rest 37, a slotted pin 38 supporting a septum 39, and a block 40 supporting the picture holders. Said block is secured by a screw 41 and nut 42 and carries a screw 43 and two guide rods 44 on which slide blocks 45. The screw 43 is operated by milled knobs 46 and is prevented from moving endwise by a suitable pin carried by block 40. On their rear faces blocks 45 carry plates 47 on which the picture holders are mounted. The picture holder comprises two plates 48, 49, the latter being pivotally supported as at 50 on the former. Each plate 48 is turned over at its edges to embrace the corresponding plate 47 and is movable vertically with respect to said plate by means of a screw 51. The vertical position of each of the plates 48 is indicated by a pointer 52 thereon, co-operating with a scale 53. In a similar way the spacing of the picture holders is indicated by a pointer 54 on one plate 47 co-operating with a scale 55 on the other.

Each plate 49 is provided with lip portions 56 as indicated in Fig. 3 to hold a picture 57, each plate being swung about its pivot 50 by worm gear 58 operable by handle 59. A pointer 60 co-operates with a scale 61 on the corresponding plate 48, to indicate the angular adjustment of the picture.

For persons with divergent eye axes the prisms 34 are swung downwardly so as to be inoperative, and the rests 14, 37 and lenses 27 are adjusted to suit the patient. The pictures 57 having been inserted, the screw 43 is operated until the two pictures are mentally fused. If

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the patient suffers from hyperphoria or cyclophoria, the pictures are adjusted vertically or angularly by the screws 51, 58. After fusion has been effected the screw 43 is operated to cause the pictures to move towards or away from one another, the patient being informed that he must endeavour to maintain the pictures in fusion while this movement is taking place. Thus the patient's eye muscles are exercised, and the divergence gradually reduced. In treating convergence the prisms 34 are brought into use, the procedure then being the same as before.

Clearly the adjustment of the eyepieces may be used in place of the adjustment of the picture holders during training.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Eye-training apparatus comprising holders for a pair of stereoscopic pictures,

eye-pieces, and means for transversely adjusting said holders and eye-pieces for the purpose set forth.

2. Apparatus as claimed in claim 1, comprising means for adjusting the pictures vertically. 30

3. Apparatus as claimed in claim 1 or 2, having means for adjusting the pictures in an angular sense.

4. Apparatus as claimed in any of the preceding claims, having movable prisms adapted to co-operate with the eye-pieces. 35

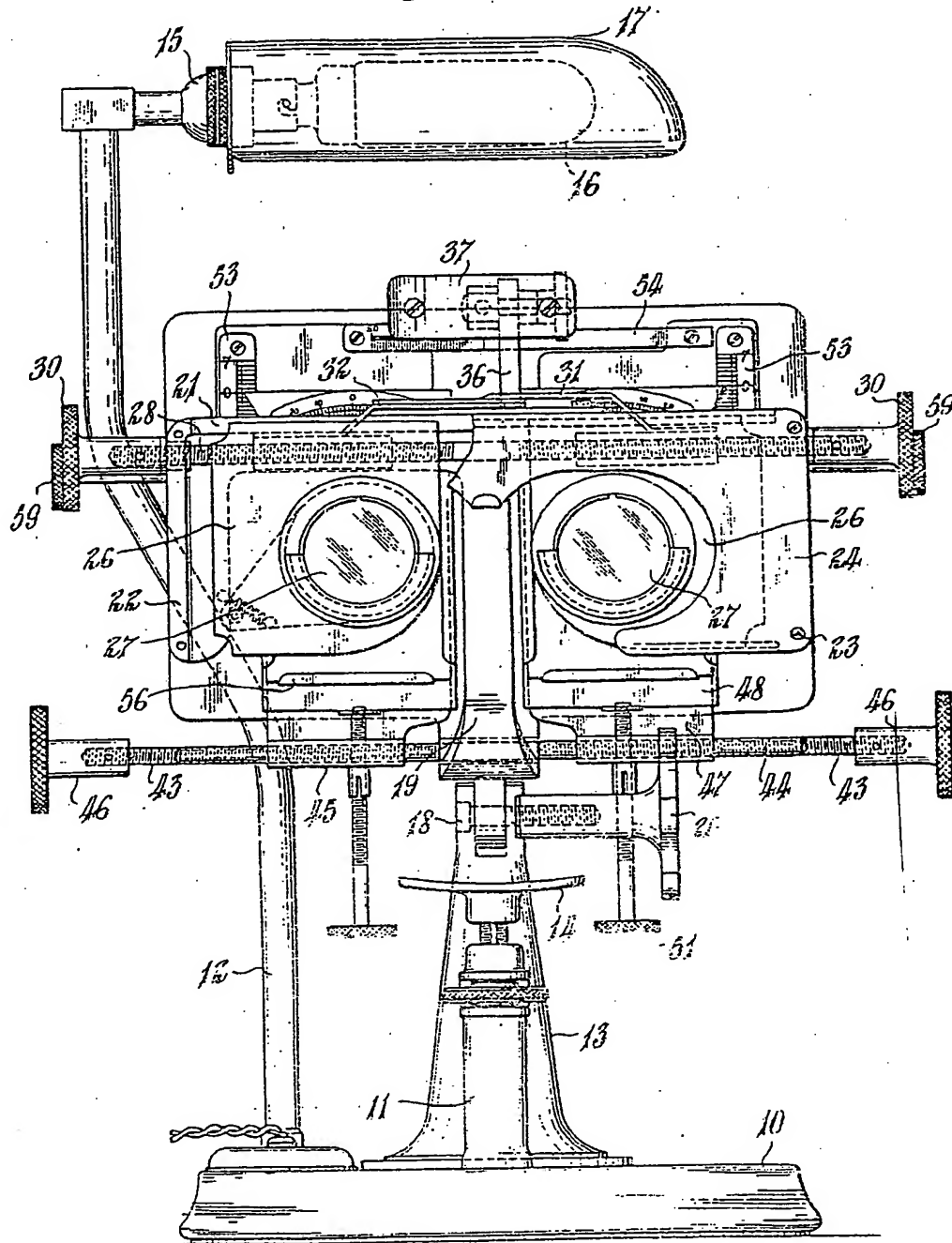
5. Apparatus as claimed in any of the preceding claims in which the eye-pieces and picture-holders are carried by a bracket, substantially as described. 40

6. Eye-training apparatus substantially as described with reference to the accompanying drawings.

Dated this 5th day of July, 1930.

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Fig. 1.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 2.

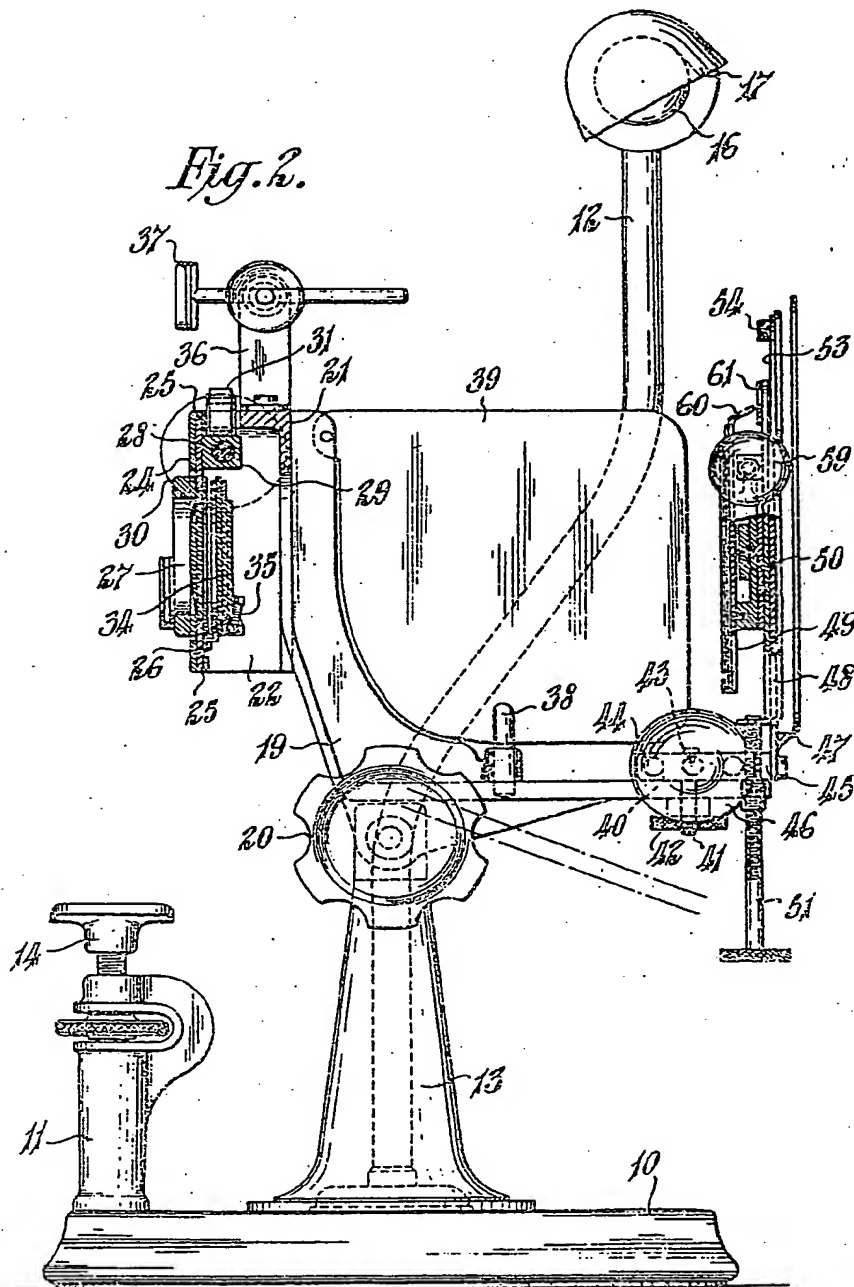
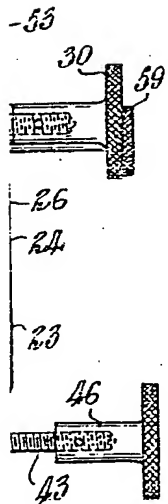
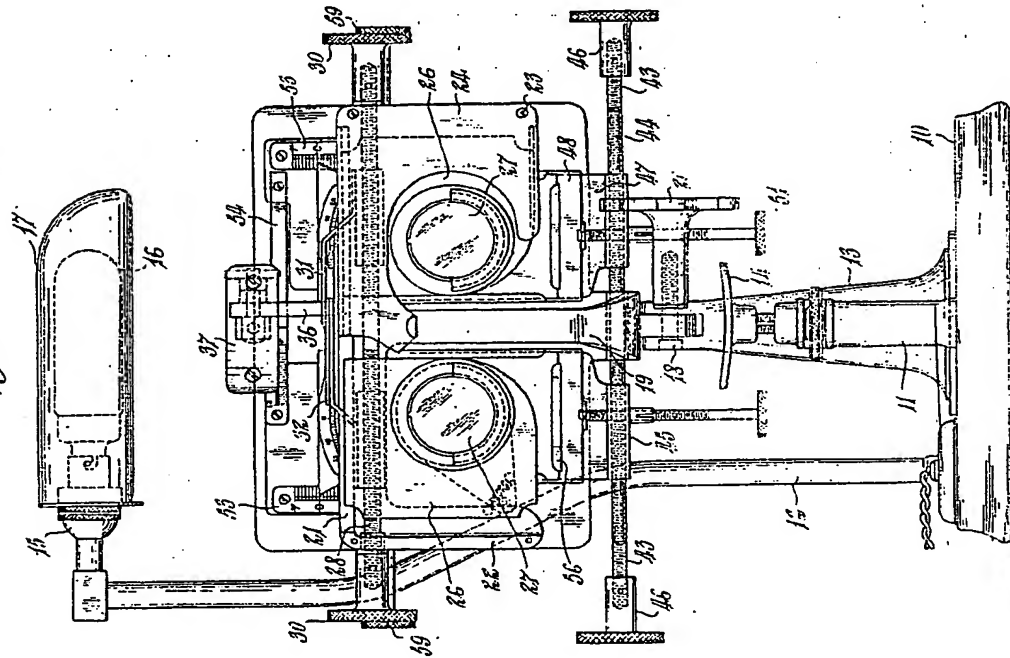


Fig. 1.



[This Drawing is a reproduction of the Original on a reduced scale]

Fig. 2.

